

The Influence of Hydrogen on Thermal and  
Catalytic Cracking of n-Octane

69791  
S/055/59/000/06/20/027  
B004/B002

(Table 1, Fig.2). The reaction furnace No. 1 used first had too much of lost space (gaps not filled by the catalyst) in which thermal cracking took place due to overheating. By using reaction furnace No. 2 thermal cracking of octane could be reduced to about one half. Table 2 and Fig. 3 give the results of the reaction after the addition of hydrogen and nitrogen. Hydrogen increases the yield of thermal cracking by 6%, and nitrogen by 3%. Fig. 4 shows that the yield of thermal cracking at 500° increases up to a constant value if the molecular ratio of  $H_2 : C_8H_{18}$  is increased. Fig. 5 shows the same result at 530°. The yield of catalytic cracking was not affected by hydrogen. Table 3 gives the analyses of the cracking products. In the presence of hydrogen, isomerization of n-octane set in. At 500° 5% of 3-methylheptane was obtained and at 550° 10%. The authors mentioned B. T. Abayeva (Ref. 4). There are 5 figures, 3 tables, and 11 references, 6 of which are Soviet.

ASSOCIATION: Kafedra fizicheskoy khimii (Chair of Physical Chemistry)

SUBMITTED: February 25, 1959

Card 2/2

TOPCHYEVA, K.V.; MOSKOVSKAYA, I.F.; BODROVA, I.G.; KRUPENYA, M.I.

Studying the nature of the activity of aluminosilicate catalysts.  
Vest Mosk. un. Ser. mat., mekh., astron., fiz., khim. 14 no.2:  
225-235 '59 (MIRA 13:3)

1. Kafedra fizicheskoy khimii Moskovskogo gosuniversiteta.  
(Catalysts) (Aluminosilicates)

5(4)

SOV/76-33-5-16/33

AUTHORS: Smirnova, I. V., Topchiyeva, K. V., Smetanko, N. P. (Moscow)

TITLE: The Adsorption From Solutions of Alkylaromatic Hydrocarbons on Industrial Catalysts 2. (Adsorbtsiya iz rastvorov alkil-aromaticeskikh uglevodorodov na promyshlennyykh katalizatorakh.2)

PERIODICAL: Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 5, pp 1059 - 1064 (USSR)

ABSTRACT: This paper shows the results of the investigation of the adsorption of allyl benzene, propenyl benzene, and - in comparison - n-propyl benzene from solutions of n-heptane on  $Al_2O_3$  at  $20^{\circ}$  and  $40^{\circ}$ . Table 1 shows the physical data of the hydrocarbons used. Figure 1 shows the isothermal adsorption lines at  $20^{\circ}$ , figure 2 at  $40^{\circ}$ . The absolute isothermal adsorption lines and their molecular constants were determined considering the extent of the specific surface of  $Al_2O_3$ . Figure 2 shows the isothermal lines, table 2 the data obtained. The thickness of the adsorption layer of propenyl benzene agrees with the theoretically calculated thickness of the benzene ring =  $3.7 \text{ \AA}$ . Thus the molecules of propenyl

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The Adsorption From Solutions of Alkylaromatic  
Hydrocarbons on Industrial Catalysts 2.

SOV/76-33-5-16/33

benzene show a parallel orientation towards the catalyst surface with the surface of the benzene ring. The same is true of allyl benzene and n-propyl benzene. The presence of a double bond in the side chain does not change the plano-parallel orientation of the benzene derivative. The adsorbability of the hydrocarbons with various molecular volume decreases in the order propenyl-, allyl-, n-propyl benzene. A conjugated double bond increases the adsorption potential. Adsorption decreases with increasing temperature, the adsorption layers become less dense. There are 3 figures, 2 tables, and 16 references, 14 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova  
(Moscow State University imeni M. V. Lomonosov)

SUBMITTED: October 12, 1957

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SOV/76-33-7-39/40

5(4)

AUTHORS:

Gerasimov, Ya. I., Topchiyeva, K. V., Semiokhin, I. A.,

TITLE:

Georgiy Mitrofanovich Panchenkov. On the Occasion of His 50th Birthday

PERIODICAL:

Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 7, pp 1674 - 1675 (USSR)

ABSTRACT:

On April 24, 1959 G. M. Panchenkov, a well-known Soviet specialist in physical chemistry and Professor at the Moskovskiy institut neftekhimicheskoy i gazovoy promyshlennosti im. I. M. Gubkina and Moskovskiy gosudarstvennyy universitet (Moscow Institute for Petroleum-Chemical and Gas Industry imeni I. M. Gubkin and Moscow State University), celebrated his 50th birthday. The main fields with which he was concerned are the kinetics of heterogeneous catalytic processes, the methods of separating and analyzing isotopes, and the theory of the liquid phase. His investigations of the mechanism of the transformation of hydrocarbons on aluminum silicate catalysts by the use of deuterium as a marking atom as well as his publications on the theory of viscosity are especially worth mentioning. For the latter he was awarded the Stalin Prize for the field of sciences in 1952. The

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Georgiy Mitrofanovich Panchenkov. On the Occasion  
of His 50th Birthday

SOV/76-33-7-39/40

method of separating boron isotopes devised by G. M. Panchenkov et al was demonstrated at the Vsesoyuznaya promyshlennaya vystavka (All-Union Industrial Exposition) and was awarded a diploma of the second class, this method also has won general appreciation at international expositions in Geneva, Leipzig, Peking, and Warsaw. Professor G. M. Panchenkov, who is also a teacher, founded the Kafedra fizicheskoy i kolloidnoy khimii (Chair of Physical and Colloid Chemistry) at the above-mentioned Institute as well as the Laboratoriya khimii i razdeleniya izotopov v MGU (Laboratory for Chemistry and Isotope Separation at Moscow State University), which have been headed by him up to this day. 2 dissertations for the degree of Doctor and 15 dissertations for the degree of Candidate were completed under his supervision. He published 2 monographs, about 100 scientific articles, and obtained 10 patents for his inventions. G. M. Panchenkov is a member of the International Committee for Constants. Furthermore, he was awarded the orders "Krasnaya Zvezda" and "Znak Pocheta" as well as the title of Laureate of the Stalin Prize. There is 1 figure.

Card 2/2

5(4)

AUTHORS:

Topchiyeva, K. V., Romanovskiy, B. V.

SOV/20-124-1-38/69

TITLE:

Determination of the Adsorption Coefficients of Ether, Water, and Ethylene by the Kinetic Method (Opredeleniye adsorbtsionnykh koeffitsiyentov efira, vody i etilena kineticheskim metodom)

PERIODICAL:

Doklady Akademii nauk SSSR, 1959, Vol 124, Nr 1, pp 135-138 (USSR)

ABSTRACT:

There are two essentially different methods of determining the adsorption coefficients, viz. the kinetic- and the adsorption method. However, the authors believe that only the kinetic method shows the proper way of determining the adsorption coefficients. The present paper discusses the method developed by A. V. Frost (Ref 4) for determining adsorption coefficients. For the reactions occurring according to the scheme  $A_1 \rightarrow \gamma_2 A_2 + \gamma_3 A_3 + \dots + \gamma_i A_i$  he suggested the equation  $v_0 \ln(1/(1-y)) = \alpha + \beta v_0 y$ ;  $v_0$  denotes the rate at which the initial material is introduced into the reactor (expressed in Mol per unit of time and weight of the catalyst);  $y$  - the degree of transformation; the constants  $\alpha$  and  $\beta$  do not depend on  $v_0$  and  $y$ . A formula for  $\alpha$  is written down. The

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Determination of the Adsorption Coefficients of  
Ether, Water, and Ethylene by the Kinetic Method

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quantity  $1/\alpha$  can be written down as linear function of dilution. For the purpose of determining the adsorption coefficient of a substance slowing down catalytic reaction it is necessary to carry out two series of investigation: one with a dilution by the substance the adsorption coefficient of which is to be determined, and another by means of an inert diluent. The present paper deals with the slowing-down influence of additions of ether, water, and ethylene on the dehydration rate ethyl alcohol by way of ammonium oxide in order to determine the adsorption coefficients of these substances. Argon was used as inert diluent. The authors determined the adsorption coefficients of water and ether at  $250^{\circ}$  and of ethylene at  $430^{\circ}$ . At  $250^{\circ}$  alcohol is decomposed only in water and in ether. With a rise in temperature, the degree of transformation is reduced, and this diminishes the accuracy of the kinetic equation applied. At  $430^{\circ}$  alcohol is dehydrated to ethylene and water and the ether content in the catalyzed product is extremely low. All investigations were carried out under atmospheric pressure in an ordinary laboratory apparatus. The authors carried out two series of tests: one with dilution

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Determination of the Adsorption Coefficients of  
Ether, Water, and Ethylene by the Kinetic Method

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by water, ether, and argon at 250°, and the other with dilution by water, ethylene, and argon at 430°. The kinetics is conserved in the investigated interval of dilutions. On the basis of the experimentally obtained values of  $\alpha$  the diagrams for the dependence of  $1/\alpha$  on dilution were constructed. From the slope of the curves the numerical values of the adsorption coefficients were calculated. There are 2 figures, 1 table, and 11 references, 9 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova  
(Moscow State University imeni M. V. Lomonosov)

PRESENTED: August 28, 1958, by A. N. Frumkin, Academician

SUBMITTED: August 27, 1958

Card 3/3

reports to be presented at the 2nd Intl Congress on Catalysis, Paris, France, 8-9-Jul '60.

1. **MASTROT, L. J.** - "On the theory of contact catalysis of hydrogenation and dehydrogenation reactions" (Section I).  
 2. **MASTROT, J.** and **WILLIAMS, A. A.** - "Mechanism of isotope exchange of hydrogen on platinum" (Section I).  
 3. **KRUM, R.** (probably also **F. KUMM**) - "On the role of intermetallic surface films in copper heterogeneous-catalytic reactions of carbon monoxide and chlorine" (Section I).  
 4. **PRINZING, L.** and **CHURCH, V. L.** - "Catalytic transformation of cyclohexane and copper and nickel catalysts" (Section II).  
 5. **MASTROT, L. J.** and **CHURCH, V. L.** - "Catalytic transformation of cyclohexane and nickel catalysts by chlorination of alcohols in the liquid bed of a catalyst" (Section III).  
 6. **IRVING, H. A.** - "Specific aspects of the mechanism of catalysis by complex compounds" (Section II).  
 7. **IRVING, H. A.**, **IRVING, V. A.** and **IRVING, H. A.** - "Interrelation of heterogeneous and homogeneous catalysis by electron spin resonance" (Section II).  
 8. **IRVING, H. A.** - "On the catalytic properties of organometallic compounds" (Section III).  
 9. **IRVING, H. A.** - "Electron effects in catalysis" (Section I or II).  
 10. **IRVING, H. A.** - "The structure and nature of chemisorption-adsorption on metal catalysts" (Section II).  
 11. **IRVING, H. A.** and **IRVING, V. A.** - "Catalytic transformations in the chemical compound group" (Section III).  
 12. **IRVING, H. A.** and **IRVING, V. A.** - "Kinetic and mechanism of heterogeneous reduction in various metal catalysts" (Section I).  
 13. **IRVING, H. A.** and **IRVING, V. A.** - "Active sites on transition metal catalysts, revealed in the transformation of adsorbed  $\text{NO}$ " (Section II).  
 14. **IRVING, H. A.**, **IRVING, V. A.** and **IRVING, H. A.** - "On the mechanism of heterogeneous catalysis" (Section I).  
 15. **IRVING, H. A.** - "General ideas on the electronic mechanism" (Section I).  
 16. **IRVING, H. A.** - "On the electronic mechanism of catalysis" (Section I).  
 17. **IRVING, H. A.** and **IRVING, V. A.** - "On the theory of catalysis on semi-conductors" (Section I).  
 18. **IRVING, H. A.** and **IRVING, V. A.** - "On the catalytic transformation of organic compounds and the multiple theory" (Section II).

To P. A. H. V. A, K. V.



TOPCHYEVA, K.V.; ZEN'KOVICH, I.A.; TRESHKOVA, Ye.G.

Effect of hydrogen on the thermal and catalytic cracking of  
n-octane. Vest.Mosk.un.Ser.mat., mekh., astron., fiz., khim.  
no.6:164-170 '59. (MIRA 13:10)

1. Kafedra fizicheskoy khimii Moskovskogo universiteta.  
(Cracking process) (Octane)

S/195/60/001/003/013/013  
B002/B058

AUTHORS: Topchiyeva, K. V., Antipina, T. V., Li Khe-suyan'

TITLE: The Effect of the Structural Porosity of Catalysts on Their Activity and the Kinetic Parameters of the Course of the Cracking Reaction

PERIODICAL: Kinetika i kataliz, 1960, Vol. 1, No. 3, pp. 471 - 477

TEXT: The effect of the size of pores of an alumino silicate catalyst on the cracking reaction of cumene between 350 and 500°C was studied. A catalyst of the following composition was used: 12%  $Al_2O_3$  and 88%  $SiO_2$ .

The various sizes of pores between 12 and 115 Å were obtained by replacing the intermicellar water to a different degree by isobutyl alcohol, isoamyl alcohol or cumene. Moreover, an industrially produced catalyst and a catalyst of the type Gudri (Goodry?) were studied. The structure of the samples was calculated from the adsorption isotherm of methanol vapor at 20°C. The kinetic of the cracking reaction of cumene between 350 and 475°C

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The Effect of the Structural Porosity of Catalysts on Their Activity and the Kinetic Parameters of the Course of the Cracking Reaction

S/195/60/001/003/013/013  
B002/B058

is described very well by the following equation by A. V. Frost:

$v_0 \ln(1/1-y) = \alpha + \beta v_0 y$ .  $v_0$  is the volume rate of the addition of the initial material in mmoles/g·h;  $y$  is the degree of reaction;  $\alpha$  is the apparent reaction rate constant in mmoles/g·h;  $\beta$  is a constant equal to unity.  $\log \alpha$  is a linear function of  $1/T$ ; the transition from the kinetic range to the diffusion range is manifested by a break of the curve. This corresponds to a considerable change of the activation energy. There are 9 figures, 2 tables and 15 references: 13 Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: March 23, 1960

Card 2/2

YEGOROV, M.M.; IGNAT'YEVA, L.A.; KISELEV, V.F.; KRASIL'NIKOV, K.G.;  
TOPCHIEVA, K.V.

Surface properties of catalytically active aluminum oxide.  
Zhur. fiz. khim. 36 no.9:1882-1889 S '62. (MIRA 17:6)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova,  
fizicheskii fakul'tet i khimicheskii fakul'tet.

... rare earth oxide, cerium oxide, neodymium oxide,  
... cerium oxide, neodymium oxide, ...



**"APPROVED FOR RELEASE: 08/31/2001**

**CIA-RDP86-00513R001756310011-6**

**APPROVED FOR RELEASE: 08/31/2001**

**CIA-RDP86-00513R001756310011-6"**

KUBASOV, A.A.; SMIENOVA, I.V.; TOPCHIEVA, K.V.

Gas chromatographic determination of the heats of adsorption  
of hydrocarbons on aluminum oxide. Kin. i kat. 5 no.3:520-525  
My-Je '64. (MIRA 17:11)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova,  
khimicheskii fakul'tet.

ABSTRACT: The authors note that synthetic detergents are presently acquiring considerable importance not merely as detergents, but also as the catalytic agents in various reactions. The authors note that synthetic detergents are presently acquiring considerable importance not merely as detergents, but also as the catalytic agents in various reactions.

...the effect of ... on the rate of the reaction ...

...determined. A determination was made of the speed and activation energy constants of the reaction for all the samples studied. The contaminating effect of ...

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Card 3/3

НИКОЛАЕВА, А.А.; МОСКОВСКАЯ, Л.П.; ТОПОЛИЦКАЯ, Е.В.

Determination of the heats of high temperature adsorption of hydrocarbons on cracking catalysts. Vest. Mosk. un. Ser. 2: Khim. 20 no. 5:13-18 S-O '65. (MIRA 18:12)

1. Kafedra fizicheskoy khimii Moskovskogo gosudarstvennogo universiteta. Submitted June 25, 1965.

ZEN'KOVICH, I.A.; TRESHCHOVA, Ye.G.; TOPCHIEVA, K.V.

Transformation of phenylcyclopropane on titanium oxide with  
boron fluoride. Vest. Mosk. un. Ser. 2:Khim. 20 no. 5:19-22  
S-0 '65. (MIRA 18:12)

1. Kafedra fizicheskoy khimii Moskovskogo gosudarstvennogo  
universiteta. Submitted Dec. 15, 1964.

KRASIL'NIKOVA, M.K.; TOPCHIEVA, K.V.

Chemisorption of ethylene on yttrium oxide. *Kin. i kat.* 6 no. 6:  
1118-1121 N-D '65 (MIRA 19:1)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova,  
khimicheskii fakul'tet. Submitted June 28, 1965.



BORESKOVA, Ye.G.; TOPCHYEVA, K.V.; PIGUZOVA, L.I.

Catalytic activity of synthetic zeolites in the cracking of  
cumene. *Kin. i kat.* 5 no.5:903-909 S-O '64. (MIRA 17:12)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova,  
khimicheskii fakul'tet.

TOICHIV-EVA, K.V.; MOSKOVSKAYA, I.F.; DOBROKHOTOVA, N.A.

Use of thermometric titration for measuring the acidity of solid  
oxide catalysts. Kin. i kat. 5 no.5:910-915 S-O '64.

(MIRA 17:12)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.

L 1681-66 EWT(m)/EPF(c)/EWP(j)/EWP(t)/EWP(b) IJP(c) JD/JG/RH

ACCESSION NR: AP5020989

UR/0195/65/008/004/0751/0751

546.643-31-64

AUTHOR: Topchiyeva, K. V.; Stetsenko, V. Ya.

TITLE: New catalytic properties of yttrium oxide

SOURCE: Kinetika i kataliz, v. 6, no. 4, 1965, 751

TOPIC TAGS: catalysis, yttrium compound, hydrogenation, isomerization, ethylene, propylene, acetylene

ABSTRACT: The article presents the results of a series of experiments which point to the sufficiently high catalytic activity of yttrium oxide in hydrogenation and isomerization reactions. Hydrocarbons investigated included ethylene, propylene, divinyl, acetylene, and 2-methyl-pentene. Temperatures varied from 110-320C, the hydrogen/hydrocarbon ratio from 3:1 to 12:1, the space velocity from 144 to 576 hr<sup>-1</sup>, and the total degree of conversion from 70 to 100%. A necessary condition for the appearance of the catalytic activity of yttrium oxide is its activation with hydrogen. A sufficiently constant activity of the yttrium

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ACCESSION NR: AP5020989

oxide is attained at a given time and activation rate with hydrogen, with a comparatively small amount of hydrocarbon in the reaction mixture. The work indicates that this catalyst is very subject to poisoning by traces of moisture and oxygen.  
Orig. art. has: 2 tables

ASSOCIATION: Moskovskii gosudarstvennyi universitet im. M. V. Lomonosova,  
Khimicheskii fakul'tet! (Moscow State University, Department  
of Chemistry)

SUBMITTED: 03Feb85

ENCL: 00

SUB CODE: GC

NR REF SOV: 000

OTHER: 000

Card 2/2

GANICHENKO, L.G.; TOPOR, N.D.; TORCHINEVA, K.V.

Physicochemical properties of rare-earth oxides. Vest.Mosk.un.Ser.  
2:Khim. 19 no.4:19-25 Ji-Ag '64. (MIRA 18:3)

1. Kafedra fizicheskoy khimii Moskovskogo universiteta.

TOPCHIEVA, K.V.; ROMANOVSKIY, B.V.

Circulation method used in studying the kinetics of heterogeneous catalytic reactions. Part 1: Dehydration of ethyl alcohol on aluminum oxide. Kin. i kat. 6 no.2:279-284 Mr-Ap '65. (MIRA 18:7)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova, khimicheskii fakul'tet.

TOCHILYEVA, K.V., MOSKOVSKAYA, I.F.: STETSSENKO, V.Z.

Electric conductivity of aluminosilicate catalysts for cracking.  
Kinet. kat. 5 no.6:1026-1033 NLD '64. (MIRA 18:3)

1. Moskovskiy gosudarstvennyy universitet Imeni Lomonosova  
Khimicheskii fakul'tet.

VEN'YAMINOV, S.A.; TOPCHIYEVA, K.V.

Gas chromatographic method of studying the adsorption of acetylene  
and vinyl chloride on technical aluminum oxide. Khim. i kat. 5  
no.6:1107-1110 N-D '64. (MIRA 18:3)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova,  
khimicheskii fakul'tet.



BONESKOVA, Ya.G.; LYGIN, V.I.; TOPCHIEVA, E.V.

Infrared spectroscopy study of the nature of active centers in  
the cracking of cumene catalyzed by decationized zeolites. Kin. i  
kat. 5 no.6:1115-1118 N-D '64. (MIRA 18:3)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova,  
khimicheskiy fakul'tet.

SMIRNOVA, I.V.; KUBASOV, A.A.; BYULOV, Martin; TOPCHIEVA, K.V.

Heats of wetting of aluminum oxide by solutions of methylcyclohexenes in n-heptane. Dokl. AN SSSR 160 no.1:170-173 Ja '65.  
(MIRA 18:2)

1. Moskovskiy gosudarstvennyy universitet. Submitted July 2, 1964.

TOPCHIEVA, K.V.; ROMANOVSKIY, B.V.; BIRYUKOVICH, M.M.

Study of the inhibiting action of cumene hydroperoxide in  
the cracking reaction. Vest. Mosk. un. Ser. 2:Khim. 18 no.3:  
18-23 My-Je '63. (MIRA 16:6)

1. Kafedra fizicheskoy khimii Moskovskogo universiteta.

TOPCHIEVA, K. V.; SHARAYEV, O. K.; PEREL'MAN, A. I.; RYABOVA, A. A.

Effect of the porous structure of the aluminosilicate carrier  
on the polymerizing activity of the chromium oxide catalyst.  
Plast. massy no. 5:11-13 '64. (MIRA 17:5)

TOPCHTYEVA, K. V.; SMIRNOVA, I. V.; KUBASOV, A. A.

"Concerning the mechanism of cyclene isomerization over alumina."

report submitted to 3rd Intl Cong on Catalysis, Amsterdam, 20-25 Jul 64.

Moscow State Univ im Lomonosov.

TOPCHIEVA, K.V.; MOSKOVSKAYA, I.F.; STETSENKO, V.Ya.

Electric conductivity of synthetic zeolites. Zhur.fiz.khim. 37  
no.8:1883-1885 Ag '63. (MIRA 16:9)  
(Zeolites--Electric properties)

TOPTSHINEVA, K. V.

A. P. Ballod and K. V. Tontshineva

"The Nature of the Catalytic Effect of Aluminumsilicates." Progress of Chemistry  
20, 161-175, April 1951, Moscow

ABSTRACT AVAILABLE

D-50054

TOPCHIYEVA, K.V.; VEN'YAMINOV, S.A.

Kinetics of hydrochlorination of acetylene on aluminum  
oxide. Kin. i kat. 4 no.3:450-460 My-Je '63. (MIRA 16:7)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova,  
khimicheskij fakul'tet.  
(Acetylene) (Hydrochloric acid)  
(Aluminum oxide)



L 12593-63 EPF(c)/EWT(m)/BDS Pr-4 RM/WW  
 ACCESSION NR: AP3001602 S/0189/63/000/003/0018/0023

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AUTHOR: Topchiyeva, K. V.; Romanovskiy, B. V.; Biryukovich, M. M.

58

TITLE: A study of the inhibitory effect of cumenehydroperoxide in the cracking reaction

SOURCE: Moscow. Universitet. Vestnik. Seriya 2. Khimiya, no. 3, 1963, 18-23

TOPIC TAGS: cumene, cumenehydroperoxide, cracking, catalysis of cracking, aluminosilicate catalyst, acetophenone, inhibition of catalysis

ABSTRACT: While the cracking of cumene is today widely used in evaluating the capacity of aluminosilicate catalysts, it is essential to take into consideration the inhibiting effect of hydroperoxides of cumene on the kinetic laws of the reaction. This seems to be due to competition of cumene and hydroperoxide for the active centers of the catalyst. In this present work the adsorption coefficients of the hydroperoxide of cumene and its decomposition products (acetophenone and acetone) were determined. The principle of the method used consisted in studying the effect on the reaction rate constant of various amounts of hydroperoxide, as well as using dilutions by an inert substance - cyclohexane. The obtained results showed that the magnitude of the adsorption coefficient of hydroperoxide is very

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ACCESSION NR: AP3001602

2

sizable - an indication that the adsorption equilibrium is substantially shifted towards the formation of a stable complex between the hydroperoxide and the catalyst's active centers. It was also found that acetophenone equals the hydroperoxide in inhibition effect, while acetone has a four times lesser adsorption coefficient. Orig. art. has: 4 formulas, 4 charts, and 1 table.

ASSOCIATION: Moskovskiy universitet, kafedra fizicheskoy khimii (Moscow University, Department of Physical Chemistry)

SUBMITTED: 11Jul61

DATE ACQ: 09Jul63

ENCL: 00

SUB CODE: 00

NO REF SOV: 011

OTHER: 002

Card 2/2

TOPCHIEVA, K.V.; RAKHOVSKAYA, S.M.; KUCHKAYEVA, I.K.; SHAMINA, I.S.;  
YURKEVICH, A.A.

Modifications of the supporting structure of phosphoric acid  
catalysts in the ethylene hydration process. Neftekhimiia 3  
no.2:271-275 Mr-Ap '63. (MIRA 16:5)

1. Saratovskiy gosudarstvennyy universitet imeni N.G.Chernyshevskogo,  
Nauchno-issledovatel'skiy institut khimii, Moskovskoy gosudarstvennyy  
universitet imeni Lomonosova i Leningradskiy tekhnologicheskii  
institut imeni Lenooveta.

(Phosphoric acid) (Ethylene) (Hydration)

TOPCHIYEVA, K.V.; ROMANOVSKIY, B.V.; KHO-SHI TKHOANG

Kinetics of cumene cracking on 10X zeolite. Dokl. AN SSSR 149  
no. 3:644-647 Mr '63. (MIRA 16:4)

1. Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova.  
Predstavleno akademikom M.M. Dubininym.  
(Cumene) (Cracking process) (Zeolites)

SMIRNOVA, I.V.; KARPUKHINA, G.V.; TOPCHYEVA, K.V.

Adsorption of allylbenzene and allylcyclohexane on a chromia catalyst. Neftekhimiia 3 no.1:71-73 Ja-F '63. (MIRA 16:2)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.  
(Benzene) (Cyclohexane) (Adsorption)

SMIRNOVA, I.V.; TOPCHYEVA, K.V.; KUBASOV, A.A.; SAVCHENKO, L.V.

Adsorption of methylcyclohexene from solutions at elevated temperature. Dokl. AN SSSR 147 no.3:660-662 N '62. (MIRA 15:12)

1. Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova.  
Predstavleno akademikom P.A. Rebinderom.  
(Cyclohexene) (Adsorption)

ORMANETS, V.; TRONOVA, V.A.; TOPCHIYEVA, K.V.

Simplified method for the determination of mono-, di-, and triethylamines in a six-component mixture obtained in the catalytic deamination of aliphatic amines over dehydrating oxide catalysts. Zhur.anal.khim. 17 no.9:1109-1113 D '62.  
(MIRA 16:2)

1. M.V. Lomonosov Moscow State University.  
(Amines)

BALANDIN, A.A., akademik, red.; KOBOZEV, N.I., prof., red.; LEBEDEV,  
V.P., dots., zam. red.; MAL'TSEV, A.N., zam. red.; AGROUNOV,  
A.Ye., dots., zam. red.; TOPCHIEVA, K.V., prof., red.; YUR'YEV,  
Yu.K., prof., red. PANCHENKOV, G.M., prof., red.; SOKOL'SKIY,  
D.V., akademik, red.; VOL'KENSHTEYN, F.F., prof., red.; LAZAREVA,  
L.V., tekhn. red.

[Catalysis in the institutions of higher learning; papers of the  
First Interuniversity Conference on Catalysis] Kataliz v vysshei  
shkole; trudy. Moskva, Izd-vo Mosk. univ. No.1. Pt.2. 1962.  
325 p. (MIRA 15:10)

1. Mezhvuzovskoye soveshchaniye po katalizu. 1st, 1958. 2. Aka-  
demiya nauk Kazakhskoy SSR (for Sokol'skiy). 3. Khimicheskii fa-  
kul'tet Moskovskogo gosudarstvennogo universiteta (for Yur'yev).  
(Catalysis)



SERGEYEV, G.B.; SHARAYEV, O.K.; TOPCHYEVA, K.V.; PEREL'MAN, A.I.;  
TOPCHYEV, A.V.

Electron paramagnetic resonance studies of chromium oxide  
catalysts for ethylene polymerization. Neftekhimia 2 no.1:18-20  
Ja-F '62. (MIRA 15:5)

1. Institut neftekhimicheskogo sinteza AN SSSR i Khimicheskii fakul'tet  
Moskovskogo universiteta.  
(Catalysts--Spectra) (Ethylene) (Polymerization)

TOPCHIEVA, K.V.; ROSOLOVSKAYA, Ye.N.

Effect of the dehydration of an aluminosilicate catalyst on its acidity. Neftekhimiia 2 no.3:298-304 My-Je '62.

(MIRA 15:8)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova, khimicheskii fakul'tet.

(Aluminosilicates) (Dehydration (Chemistry))  
(Hydrogen-ion concentration)

SHARAYEV, O.K.; TOPCHIYEVA, K.V.; PEREL'MAN, A.I.; TOPCHIEV, A.V.

Nature of the induction period in the polymerization of ethylene on  
a chromium oxide catalyst. Neftekhimiia 2 no.2:187-188 Mr-Apr '62.  
(MIRA 15:6)

1. Institut neftekhimicheskogo sinteza AN SSSR i Moskovskiy  
universitet, kafedra fizicheskoy khimii.  
(Ethylene polymers) (Catalysts, Chromium)

TOPCHIEVA, K.V.; ROSOLOVSKAYA, Ye.N.

Effect of the heat treatment of aluminosilicate catalysts in a vacuum of their structure. Neftekhimiia 2 no.2:175-178 M5-Apr '62.  
(MIRA 15:6)

1. Moskovskiy gosudarstvenny universitet imeni M.V.Lomonosova  
khimicheskii fakul'tet.

(Aluminosilicates)

S/204/62/002/001/001/007  
I032/I232

AUTHORS: Sergeyev, G. B., Sharayev, O. K., Topchiyeva, K. V., Perel'man, A. I., and Topchiyev, A. V.

TITLE: Investigation of chromic oxide catalysts for polymerisation of ethylene by the method of electron paramagnetic resonance

PERIODICAL: Neftekhimiya, v. 2, no. 1, 1962, 18-20

TEXT: The aim of this study was the verification of the hypothesis, previously expressed by the authors, that the activity of the catalyst is produced under the action of the reacting substance, ethylene. Experiments on polymerisation of ethylene over chromic oxide catalysts were carried out and the EPR spectra of the catalyst withdrawn from the reaction zone at different stages of the process were taken. The catalyst was prepared by impregnating aluminum silicate with an aqueous solution of chromic anhydride and subsequent activation. Two varieties of the catalyst, differing by the method of activation, were used. One was activated in a current of air at 500°, the other one— under vacuum at 350°. The catalyst activated under vacuum displayed an induction period. The EPR spectra of the two varieties of catalyst, taken at identical stages of the polymerisation process, were found to be practically identical with respect both to the line width and the value of

Card 1/2

Investigation of chromic oxide catalysts...

S/204/62/002/001/001/007  
I032/I232

the  $g$  factor (which was 1.97). The identity of the active centres in the two varieties of the catalyst was thus established. The observed narrow EPR line is attributed to a compound of quinquevalent chromium and the  $\text{Cr}^{5+}$  ions are considered to constitute the active centres. The induction period in the catalyst activated under vacuum is interpreted as the time necessary for the reduction of  $\text{Cr}^{6+}$  by ethylene. There are 2 figures. ✓

ASSOCIATION: Institut neftekhimicheskogo sinteza AN SSSR, Khimicheskii fakultet Moskovskogo Universiteta (Institute of Petrochemical Synthesis, AS USSR, Chemistry Faculty, University of Moscow)

SUBMITTED: November 24, 1961

Card 2/2

S/076/62/036/009/002/011  
B101/B102

AUTHORS: Yegorov, L. M., Ignat'yeva, L. A., Kiselev, V. F., Krasil'nikov, I. G., and Topchiyeva, K. V.

TITLE: Study of the surface properties of catalytic aluminum oxide

PERIODICAL: Zhurnal fizicheskoy khimii, v. 36, no. 9, 1962, 1882 - 1889

TEXT: The specific heat of wetting of commercial  $Al_2O_3$  by water, methanol, ethanol, and n-heptane, and the content of structural water  $Al_2O_3$  were measured, the phase composition of  $Al_2O_3$  was determined by x-ray analysis, and the infrared spectrum of deuterated  $Al_2O_3$  was taken. Whereas with n-heptane the heat of wetting is independent of the content of structural water in  $Al_2O_3$ , it increases, in the case of water and alcohols, with increasing thermal dehydration of  $Al_2O_3$ . Since, however, the specific surface of  $Al_2O_3$  becomes smaller at high annealing temperatures, the heat of

Card 1/3

S/076/62/036/009/002/011  
B101/B102

Study of the surface ...

wetting calculated per g of  $Al_2O_3$  reaches a maximum for  $Al_2O_3$  heated at 500°C. The curve for heat of wetting ( $Q$ , erg/cm<sup>2</sup>) versus structural water ( $\mu$ mole/m<sup>2</sup>) shows the following sections: (1) Increase of  $Q$  after thermal treatment of  $Al_2O_3$  at 20 - 150°C owing to removal of the adsorbed  $H_2O$ ; (2) unchanged  $Q$  at 170 - 200°C in spite of dehydration of the bayerit in the bulk of  $Al_2O_3$ ; (3)  $Q$  increases at 200 - 500°C owing to dehydration of the  $Al_2O_3$  surface; (4) sharp increase of  $Q$  between 500 and 700°C, although the content of structural water changes only little in this range owing to formation of  $\gamma$ - $Al_2O_3$ ; (5) increase of  $Q$  at 800-900°C owing to formation of  $\kappa$ ,  $\delta$ ,  $\theta$ , and  $\alpha$ - $Al_2O_3$  (corundum). The infrared spectrum of deuterated  $Al_2O_3$  showed a broad 2630 cm<sup>-1</sup> band which disappeared at 400°C (interacting OD groups), a narrow band at 2755 cm<sup>-1</sup> (free, non-interacting OD groups), and a narrow 2710 cm<sup>-1</sup> band (weakly bound OD groups). For gibbsite, maximum hydration was calculated to be  $\sim 22 \mu\text{mole/m}^2$ ; for the (0001) face of corundum, the hydration amounts to 12.7  $\mu\text{mole/m}^2$ . The coordination sphere of the Al

Card 2/3



Study of the surface ...

3/076/62/036/009/002/G11  
B101/B102

surface atoms which is not fully occupied after the thermal dehydration is filled up by water or alcohols with formation of hydrate or alcoholates, respectively. The irreversible sorption of alcohols increases after thermal treatment of  $Al_2O_3$  at high temperature. There are 4 figures and 2 tables.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova, Fizicheskiy i khimicheskiy fakul'tety (Moscow State University imeni M. V. Lomonosov, Physical and Chemical Departments)

SUBMITTED: November 1, 1960

Card 3/3

TOPCHIEVA, K.V.; ANTIPINA, T.V.; LI KHE-SUYAN'; LEONT'YEV, Ye.A.

Formation of the porous structure of aluminosilicate catalysts  
subjected to the action of surface-active agents. *Kin.i kat.*  
2 no.6:887-893 N-D '61. (MIRA 14:12)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova,  
khimicheskii fakul'tet.

(Aluminosilicates)  
(Surface-active agents)

TOPCHYEVA, K.V.; PLANOVSKAYA, I.P.

Relationship between the extent of gaseous phase mixing in a  
fluidized bed and the flow rate and height of the catalyst layer.  
Dokl. AN SSSR 141 no.3:679-682 N '61. (MIRA 14:11)

1. Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova.  
Predstavleno akademikom S.I. Vol'fkovichem.  
(Fluidization) (Catalysts)

GUSEYNOVA, Z.A.; TOPCHIYEVA, K.V.; ZULFUGAROV, Z.I.

Effect of activating cations on the porosity and activity of  
metallo-silicate catalysts [in Azerbaijani with summary in  
Russian]. Azerb.khim.zhur. no.6:47-55 '59. (MIRA 14:9)  
(Catalysts) (Cations)

TOPCHIEVA, K.V.; VEN'YAMINOV, S.A.

Hydrochlorination of acetylene on aluminum oxide. Kin.i kat. 3  
no.1:118-122 '62. (MIRA 15:3)

1. Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova,  
khimicheskiy fakul'tet.  
(Acetylene) (Hydrochloric acid) (Aluminum oxide)

S/204/61/001/006/001/004  
E075/E436

AUTHORS:

Topchiyeva, K.V., Sharayev, O.K., Perel'man, A.I.,  
Topchiyev, A.V.

TITLE:

Some data on the polymerization of ethylene on chromia catalyst

PERIODICAL: Neftekhimiya, v.1, no.6, 1961, 780-785

TEXT: The object of the work was to continue the investigation of ethylene polymerization process on chromia catalyst in order to elucidate the nature of the catalytic activity. The chromia catalyst was deposited on alumino-silicate obtained from silica gel covered with 3% wt of  $Al_2O_3$ . One portion of the catalyst was activated in N (dry air stream) for 4 hours at  $500^{\circ}C$ . The other portion was activated under vacuum at  $350^{\circ}C$  for 4 hours. Both catalysts contained 3% wt Cr. The quantities of  $Cr^{6+}$  were 1.25 and 1.96% wt for the catalysts activated under vacuum and in N respectively. Experiments were carried out at several temperatures between 40 and  $135^{\circ}C$ . Ethylene was fed into reactor at the rate of 40 ml/min and each experiment lasted 40 min. Activity of the catalysts was obtained from the increases in their

Card 1/3

Some data on the polymerization ...

S/204/61/001/006/001/004  
E075/E436

weight due to deposition of polymer. The amount of heat evolved during the process was measured to observe the progress of the polymerization. It was assumed that the rise of the catalyst temperature  $T$  is proportional to the heat evolved and, consequently, to the reaction rate. The small initial heating obtained corresponded to the heat of adsorption. It was followed by an induction period and the main heating effect due to the polymerization. The heating curve rose exponentially, passed through a maximum and then fell as the reaction rate decreased. The length of the induction period increased (from about 2 to 20 min) with the decreasing temperature of reaction. The induction period disappeared when the catalyst was activated with ethylene instead of nitrogen at 500°C. The authors concluded that the formation of active surface on chromia catalyst was due to its interaction with ethylene. The length of the induction periods was governed by the time of activation of the surface. The authors postulated that ethylene reduced chromium in the catalyst from  $\text{Cr}^{6+}$  to  $\text{Cr}^{5+}$ . The catalyst activated in air operated without the induction period because such a catalyst could be

Card: 2/3

Some data on the polymerization ...

S/204/61/001/006/001/004  
E075/E436

easily reduced. This did not apply to the catalyst activated under vacuum (containing chromium chromates) which was much more difficult to reduce. The formation of the reduced form of chromium was confirmed by electron pararesonance spectra. There are 2 figures.

ASSOCIATION: Institut neftekhimicheskogo sinteza AN SSSR  
Moskovskiy gosudarstvennyy universitet  
Kafedra fizicheskoy khimii  
(Institute of Petrochemical Synthesis AS USSR  
Moscow State University  
Department of Physical Chemistry)

SUBMITTED: October 12, 1961

Card 3/3



SMIRNOVA, I.V.; KUBASOV, A.A.; TOPCHYEVA, K.V.

Heat of wetting aluminum oxides by benzene, cyclohexane, and  
cyclohexene solutions in n-heptane. Dokl. AN SSSR 139 no.1:  
150-153 J1 '61.  
(MIRA 14:7)

1. Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova.  
(Aluminum oxide) (Heat of wetting)

TOPCHIEVA, K.V.; ZEN'KOVICH, I.A.; BUKANAYEVA, F.M.

Catalytic activity of rare earth oxides deposited on silica in reactions involving the decomposition of alcohol. Vest. Mosk. un. Ser. 2: Khim. 16 no.1:34-37 Ja-F '61. (MIRA 14:4)

1. Kafedra fizicheskoy khimii Moskovskogo universiteta.  
(Rare earth oxides) (Dehydration (Chemistry))

TOPCHIEVA, K.V.

Nature of the acidity of aluminosilicate cracking catalysts. Probl.  
kin. i kat. 10:247-254 '60. (MIRA 14:5)

1. Khimicheskiy fakul'tet Moskovskogo Gosudarstvennogo universiteta.  
(Aluminosilicates) (Catalysts)

S/189/60/000/005/001/006  
B110/217

AUTHORS: Topchiyeva, K. V., Zen'kovich, I. A., Bukanayeva, F. M.

TITLE: Effect exerted by the addition of rare earth oxides upon the catalytic properties of some oxidizing catalysts in hydrocarbon reactions

PERIODICAL: Vestnik Moskovskogo universiteta. Seriya 2, khimiya, no. 5, 1960, 3-5

TEXT: Rare earths ( $\text{Sm}_2\text{O}_3$ ;  $\text{Nd}_2\text{O}_3$ ) are good dehydrogenating and cyclizing catalysts for paraffins and cycloparaffins, the activity of which is greatly increased by mixing with  $\text{Al}_2\text{O}_3$ . The authors aimed at obtaining a catalyst with bifunctional action (rare earth component for dehydrogenation) by adding rare earth oxides to aluminum silicate. The most active aluminum silicate (30%  $\text{Al}_2\text{O}_3$ ; 70%  $\text{SiO}_2$ ) with admixtures of 5% of the total weight of  $\text{La}_2\text{O}_3$ ;  $\text{Nd}_2\text{O}_3$ ;  $\text{Sm}_2\text{O}_3$ ;  $\text{Pr}_2\text{O}_3$ ;  $\text{Y}_2\text{O}_3$ ;  $\text{Yb}_2\text{O}_3$ , was tested.  $\text{Al}(\text{OH})_3$ , silica gel, and rare earth hydroxide were mixed and activated in the  $\text{N}_2$  current at  $550^\circ\text{C}$  to pro-

Card 1/5

Effect exerted by ...

S/189/60/000/005/001/006  
B110/B217

duce the catalysts. Each experiment was followed by reactivation in the air current at 500-550°C. Cumene cracking was studied at 450°C and a volume rate of 1 ml/ml·hr. When 5% oxide were added, the cracking ratio, mole of the separated gas : mole of passed through cumene decreased from 45% to 35%. n-octane was also investigated at 500°C and a volume rate of 0.65 ml/ml hr. The ratio, gas weight : weight of the passed through n-octane decreased by ≈ 2 mole%, with gas- and catalyzate composition remaining unchanged after analysis by means of BFM(VTI) apparatus. 5% Nd<sub>2</sub>O<sub>3</sub> admixture at 320°C, H<sub>2</sub> pressure = 24 atm., volume rate, 1 ml/ml·hr resulted at unchanged composition of the catalyzate in a decrease of cracking by ≈ 7 mole%. This reduction of activity is due to a contamination of the acid aluminum silicate centers by the strongly basic hydroxides of the rare earths and partial destruction of the aluminum silicate structure. Also the catalysts: 95% Al<sub>2</sub>O<sub>3</sub> : 5% Pr<sub>2</sub>O<sub>3</sub>; 95% Al<sub>2</sub>O<sub>3</sub> : 5% Yb<sub>2</sub>O<sub>3</sub>; 95% Al<sub>2</sub>O<sub>3</sub> : 5% Sm<sub>2</sub>O<sub>3</sub>; 80% Al<sub>2</sub>O<sub>3</sub> : 20% La<sub>2</sub>O<sub>3</sub>; 80% Al<sub>2</sub>O<sub>3</sub> : 20% Pr<sub>2</sub>O<sub>3</sub>, with n-octane at 500-545°C and a volume rate of 0.64-0.16 ml/ml·hr, resulted in no increase of activity. The increase of cracking by ≈ 6-10% obtained with 80% Al<sub>2</sub>O<sub>3</sub> : 20% Pr<sub>2</sub>O<sub>3</sub> at a volume rate of

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Effect exerted by ...

S/189/60/000/005/001/006  
B110/B217

0.16 ml/ml-hr is due to the hydrogenation properties of  $\text{Pr}_2\text{O}_3$ . The results the authors obtained with the following catalysts: 85%  $\text{Al}_2\text{O}_3$  : 15%  $\text{Me}_2\text{O}_3$  (Me = Nd, Sm) were in complete disagreement with those of V. I. Komarewsky (Ref. 1: Industr. and Engng. chem., 49, No. 2, 264-265, 1957). The experiment made by this researcher with heptane and 85%  $\text{Al}_2\text{O}_3$  with 15%  $\text{Nd}_2\text{O}_3$  was repeated, the catalyst being produced by his method of mixing and coprecipitation. The calculated amount of highly acid 0.39 M  $\text{Nd}(\text{NO}_3)_3$  was added to 0.725 M sodium aluminate solution. The catalyst was activated at  $550^\circ\text{C}$  in the  $\text{N}_2$  current. No increase of activity as compared to pure  $\text{Al}_2\text{O}_3$  was established. Possibly, Komarewsky prepared his mixing catalysts in a different way, or he compared their activity with that of the rare earth oxide and thought that  $\text{Al}_2\text{O}_3$  was inactive. The higher activity of his catalysts may also be due to  $\text{Al}_2\text{O}_3$  which, according to its way of preparation, may also have dehydrogenating properties (Table). There are 1 table and 3 references: 1 Soviet-bloc and 2 non-Soviet-bloc. The reference to English-language publications reads as follows: Ref. 2: Ciapetta F. G., Hunter J. Card 3/5

Effect exerted by ...

S/189/60/000/005/001/006  
B110/B217

B. Industr. and Engng. chem., 45, 147-55, 1953.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova,  
Kafedra fizicheskoy khimii (Moscow State University imeni M. V.  
Lomonosov Department of Physical Chemistry)

SUBMITTED: July 14, 1959

Legend to the Table: The conversion of n-heptane at 525°C on the mixing catalyst, 85%  $Al_2O_3$  : 15%  $Nd_2O_3$ ; 1) catalyst: volume rate ml/ml·hr; 2) thermal cracking 4.85 ml/hr; 3) coprecipitation method; 4) mixing method; 5) data by Komarewsky; 6) bulk factor of the catalyst, ml; 7) yield, wt%; 8) of gas; 9) of catalyst; 10) losses; 11) gas composition, vol%; 12) paraffins; 13) and 14) olefins; 15) aromatic components; 16) catalyzate composition, wt%.

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Effect exerted by ...

S/189/60/000/005/001/006  
B110/B217

Преобразование n-гептана при 525° на смешанном катализаторе состава  
85%  $Al_2O_3$ :15%  $Nd_2O_3$  ...

1 Катализатор: объемная скорость, мл/мл·час	Насыпной объем катализатора, мл	Выход, вес. %			Состав газа, по объему, %			Состав ката- лизата, вес. %	
		8 газ	9 катализата	10 потери	11 $H_2$	12 парафины	13 олефины	14 олефины	15 ароматика
2 Термический крекинг 4,58 мл/час	—	15,6	85,0	0	1,00	85,8	13,2	1—2	...
$Al_2O_3$ 0,15	30	22,6	72,3	5,1	18,1	71,5	10,4	3—4	2
3 (Метод соосаждения) 0,15 85% $Al_2O_3$ :15% $Nd_2O_3$	30	17,2	70,2	12,6	15,8	73,2	11,0	5—7	2
4 (Метод смещения) 0,15 85% $Al_2O_3$ :15% $Nd_2O_3$	30	21,9	62,8	12,3	13,5	68,9	12,6	3	1
5 (Данные Комаревского) 0,15 85% $Al_2O_3$ :15% $Nd_2O_3$	30	—	71,8	—	84,8	22,6	12,3	10,3	21

Card 5/5



TOPCHYEVA, K.V.; RAMBAYEVA, A.M.; SPOZHNIKA, A.A.

Effect of hydrogen chloride on the catalytic properties of aluminum oxide in the reaction of cracking. Vest. Mosk. un. Ser. 2: Khim. 15 no.6:10-14 M-D '60. (MIRA 14:2)

1. Kafedra fizicheskoy khimii Moskovskogo universiteta.  
(Hydrochloric acid) (Alumina)  
(Cracking process)

TOPCHIEVA, K.V.; PLANOVSKAYA, I.P.; LUSHNIKOV, V.V.

Studying the kinetics of the cracking of cumene on a fluidized aluminosilicate catalyst. Vest.Mosk.un.Ser.mat., mekh., astron. fiz., khim. 14 no.3:151-157 '59. (MIRA 13:5)

1. Kafedra fizicheskoy khimii Moskovskogo gosudarstvennogo universiteta.

(Cumene) (Cracking process)

TOPCHYEVA, K.V.; ZEN'KOVICH, I.A.; BUKANAYEVA, F.M.

Effect of rare earth oxide impurities on the catalytic properties  
of some oxide catalysts in reactions of hydrocarbons. Vest. Mosk.  
un. Ser. 2: Khim. 15 no.5:3-5 S-O '60. (MIRA 13:11)

1. Moskovskiy gosudarstvennyy universitet, kafedra fizicheskoy  
khimii.

(Rare earth oxides) (Catalysts)

S/189/60/000/002/002/008/XX  
B017/B067

AUTHORS: Topchiyeva, K. V., Antipina, T. V., and Khe-Suyan', Li

TITLE: Effect of the Pore Radius and Other Structural Characteristics of Oxidic Catalysts on the Parameters of the Course of Heterogeneous Catalytic Processes. Communication I. Production of Aluminum Silicate Catalysts With Different Structural Characteristics

PERIODICAL: Vestnik Moskovskogo universiteta. Seriya 2, khimiya, 1960, No. 2, pp. 13 - 21

TEXT: Aluminum silicate catalysts<sup>1</sup> of equal chemical composition but different structural characteristics were produced in experimental series. The adsorption- and structural properties of the catalysts were studied in dependence on the degree of displacement of intermicellar water by isobutyl alcohol and cumene. Intermicellar water was displaced by isobutyl alcohol and cumene in the apparatus shown in Fig.1. Aluminum silicate catalysts of the composition 12%  $Al_2O_3$  and 88%  $SiO_2$  were

✓

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Effect of the Pore Radius and Other  
Structural Characteristics of Oxidic  
Catalysts on the Parameters of the Course of Heterogeneous Catalytic  
Processes. Communication I. Production of Aluminum Silicate Catalysts  
With Different Structural Characteristics

S/189/60/000/002/002/008/XX  
B017/B067

produced by the method of GrozNII (Groznyy Scientific Research Institute).  
The structural characteristics of aluminum silicate catalysts are given  
in a Table. Two series of catalysts were produced: 1) Series with the  
intermicellar water being displaced by butyl alcohol at 35, 51, 81, 95,  
97, and 100%; 2) series with the intermicellar water being displaced by  
cumene at 34, 63, 90, and 96%. The adsorptive properties and structural  
characteristics of the catalysts produced were calculated from the iso-  
therms of adsorption of methyl alcohol vapor at 20°C. Figs. 2 and 4  
graphically show the adsorption isotherms of methyl alcohol vapor, the  
distribution of pore volumes and pore radii, and the dependence of the  
structural characteristics on the degree of displacement of water in  
the catalysts of the first series. Figs. 5-7 show the same curves for  
the catalysts of the second series, in which water was displaced by  
cumene. It was observed that the chemical nature and properties of the  
organic solvents, which displace the water from the catalysts, influ-  
ence the structure of the catalysts. An aluminum silicate catalyst with

Card 2/3

Effect of the Pore Radius and Other  
Structural Characteristics of Oxidic  
Catalysts on the Parameters of the Course of Heterogeneous Catalytic  
Processes. Communication I. Production of Aluminum Silicate Catalysts  
With Different Structural Characteristics

S/189/60/000/002/002/008/XX  
B017/B067

a specific surface ( $S_{\text{BET}} = 450 \text{ m}^2/\text{g}$ ) was produced. The authors mention  
Professor I. Ye. Neymark and A. V. Kiselev. There are 7 figures,  
1 table, and 6 Soviet references.

ASSOCIATION: Kafedra fizicheskoy khimii (Chair of Physical Chemistry)

SUBMITTED: October 2, 1959

✓

Card 3/3

S/189/60/000/002/003/008/XX  
B017/B067

AUTHORS: Topchiyeva, K. V. and Moskovskaya, I. F. ✓  
TITLE: Chemosorption of Hydrogen<sup>1</sup> on Aluminum Silicates and  
Aluminum and Silicon Oxides ✓  
PERIODICAL: Vestnik Moskovskogo universiteta. Seriya 2, khimiya, 1960,  
No. 2, pp. 22 - 27

TEXT: The authors studied the adsorption of hydrogen on aluminum silicate catalysts of different compositions, and on aluminum and silicon oxides at different temperatures and pressures. The apparatus for determining the hydrogen adsorption in vacuo is schematically shown in Fig.1. The following catalysts were used for adsorption experiments: 1) Aluminum silicates with a percent composition of 30/70, 50/50, 80/20  $Al_2O_3/SiO_2$ , and 2) pure aluminum and silicon oxides which were produced by a method described in Ref.13. The adsorptions were made in a temperature range of from 23 to 600°C. The course of adsorption on aluminum silicate catalysts at different temperatures with a percent

Card 1/2

Chemosorption of Hydrogen on Aluminum  
Silicates and Aluminum and Silicon  
Oxides

S/189/60/000/002/003/008/XX  
B017/B067

composition of 30/70 and 80/20  $Al_2O_3/SiO_2$  is graphically shown in Fig.2.

An increased adsorption of hydrogen on aluminum silicate catalysts occurs at 550-600°C. For aluminum oxide, this region of increased hydrogen adsorption is at 300-600°C, for silicon oxide at 400-600°C. Adsorption energy and adsorption heat were determined. Chemosorption of hydrogen on catalysts occurs in newly formed, unstable, active centers which are destroyed on a regeneration of the catalysts. The amount of adsorbed hydrogen is low and covers less than 1% of the specific surface of the catalysts. There are 5 figures, 1 table, and 14 references: 7 Soviet, 3 US, and 3 German. ✓

ASSOCIATION: Kafedra fizicheskoy khimii (Chair of Physical Chemistry)

SUBMITTED: March 16, 1959

Card 2/2



TOPCHIEVA, K.V.; TAKHTAROVA, G.N.; FOMINA, A.I.

Vapor-phase esterification of aromatic acids with ethers on oxide catalysts. Neftekhimiia 2 no.5:744-749 S-O '62. (MIRA 16:1)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova,  
khimicheskii fakul'tet.  
(Acids, Organic) (Esterification) (Ethers)

S/204/63/003/001/006/013  
E075/E436

AUTHORS: Smirnova, I.V., Karpukhina, G.V., Topchiyeva, K.V.  
TITLE: Adsorption of allylbenzene and allylcyclohexane on  
chromia catalyst

PERIODICAL: Neftekhimiya, v.3, no.1, 1963, 71-73

TEXT: The adsorption from n-heptane of the two hydrocarbons on  $\text{CrO}_3$  was studied to gain an insight into the mechanism of the polymerization of unsaturated hydrocarbons. The catalyst was prepared by a previously described method (A.V.Topchiyev et al. Dokl. AN SSSR, v.130, 1960, 344) and had the surface area of  $330 \text{ m}^2/\text{g}$ . There were no catalytic reactions taking place during the experiments. The adsorption isotherms were determined at  $20^\circ\text{C}$  by interferometry. Allylbenzene was shown to occupy an area on the catalyst similar to that occupied by benzene on silica gel or alumina. Allyl groups were apparently above the level of the adsorbed benzene nuclei making the adsorbed mono-layer relatively thick and not in contact with the catalyst surface. The molecules of adsorbed allylcyclohexane occupied much larger area, the allyl groups being in direct contact with the surface.  
Card 1/2

Adsorption of allylbenzene ...

S/204/63/003/001/006/013  
E075/E436

Because of this fact, it is considered that allylcyclohexane and other allylnaphthenes should polymerize more easily than allylbenzene. There is 1 figure.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im.  
M.V.Lomonosova (Moscow State University imeni  
M.V.Lomonosov)

SUBMITTED: July 7, 1962

Card 2/2

ТЕРЧИЙЕВА, К.В.

TPCHIYEVA, K.V., ANTIPINA, T.V., LI KHE-SUYAN'

Effect of the size of pore radii and other structural characteristics of oxide catalysts upon the parameters of the course of heterogeneous catalytic processes. Vest. Mosk. un. Ser. 2: khim. 15 no.2:13-21 Mr-Apr '60. (MIRA 13:6)

1. Kafedra fizicheskoy khimii Moskovskogo universiteta.  
(Catalysts) (Aluminosilicates)

TOPCHIEVA, K.V.; DANILOVA, N.A.; MAKAROVA, A.M.

Investigating the effect of high temperature and water vapor  
on the structure and activity of magnesium silicate catalysts.  
Azerb.khim.shur. no.2:85-91 '59. (MIRA 13:6)  
(Magnesium silicate) (Catalysis)

SMIRNOVA, V.Ye.; TOPCHIEVA, K.V.; ZUL'FUGAROV, Z.G.

Effect of the chemical composition, the pH of the synthesis medium, and the nature of the initial sols on the activity of aluminosilicate catalysts. Azerb.khim.zhur. no.1:83-95  
'59. (MIRA 13:6)

(Aluminosilicates) (Catalysis)

FROST, Andrey Vladimirovich, prof. [deceased]; Prinimali uchastiye:

BUSHMAKIN, I.N.; VVEDENSKIY, A.A.; GRYAZNOV, V.M.; DEMENT'YEVA,  
M.I.; DINTSES, A.I.; DOBROMRAVOV, R.K.; ZHARKOVA, V.R.; ZHERKO,  
A.V.; IPAT'YEV, V.N.; KVIATKOVSKIY, D.A.; KOROBV, V.V.; MOOR,  
V.G.; NEMTSOV, M.S.; RAKOVSKIY, A.V.; REMIZ, Ye.K.; RUDKOVSKIY,  
D.M.; RYSAKOV, M.V.; SEREBRYAKOVA, Ye.K.; STEPUKHOVICH, A.D.;  
STRIGALEVA, N.V.; TATEVSKIY, V.M.; TILICHEYEV, M.D.; TRIFEL',  
A.G.; FROST, O.I.; SHILYATEVA, L.V.; SHCHEKIN, V.V., DOLGOPOLOV,  
N.M., sostavitel'; GERASIMOV, Ye.I., otv.red.; SMIRNOVA, I.V., red.;  
TOPCHIYEVA, K.V.; YASTREBOV, V.V., red.; KONDRASHKOVA, S.P., red.  
izd-va; LAZAREVA, L.V., tekhn.red.

[Selected scientific works] Izbrannye nauchnye trudy. Moskva,  
Izd-vo Mosk.univ., 1960. 512 p. (MIRA 13:5)

1. Chlen-korrespondent AN SSSR (for Gerasimov).  
(Chemistry, Physical and theoretical)

TOPCHYEVA, K.V., MOSKOVSKAYA, I.F.

Chemisorption of hydrogen on aluminosilicates and aluminum and  
silicon oxides. Vest. Mosk. un. Ser. 2: khim. 15 no.2:22-27  
Mr-Ap '60. (MIRA 13:6)

1. Kafedra fizicheskoy khimii Moskovskogo universiteta.  
(Hydrogen) (Aluminosilicates) (Alumina) (Silica)



TOPCHYEVA, K.V.; ROMANOVSKIY, B.V.; TIMOSHENKO, V.I.

Kinetics of heterogeneous catalytic reactions studied by the circulation method. Part 2: Cumene cracking over aluminosilicate catalysts. Kin. i kat. 6 no. 3: 471-475 My-Je '65.

(MIRA 18:10)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova, khimicheskiy fakul'tet,

TOPCHIEVA, K.V.; STECHENKO, V.Yu.

New catalytic properties of yttrium oxide. *Kin. i Kat.* 6 no.4:751  
Jl-Ag '65. (MIRA 18:9)

1. Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova,  
Khimicheskii fakul'tet.

KIRICHENKO, A.G., inzh.; TORCHILYEVA, M.V., inzh.; NEVZOROV, R.I., inzh.;  
PANTELYAT, G.S., inzh.

Biochemical consumption of oxygen by the waste waters of  
Kharkov. Vod. i san. tekhn. no.4:12-14 Ap '65.

(MTRA 19:1)

DEMINA, A.T.; TOPCHIYEVA, M.V.

Operations of primary horizontal clarifiers at the Kharkov  
biological station. Vod. i san. tekhn. no.9:3-7 S '58. (MIRA 11:10)  
(Kharkov--Water--Purification)

1ST AND 2ND COLUMNS																										3RD AND 4TH COLUMNS																									
1ST AND 2ND COLUMNS																										3RD AND 4TH COLUMNS																									
<p>CA TOPCHIEVA, N.K.</p>																																																			
<p>Determination of small quantities of carbonate. N.K. Topchieva. <i>Zavodskaya Lab.</i> 3, 702-5(1934). - Carbonate can be detd. in concns. of not less than 0.01 N by titration with standard aq. <math>\text{Pb}(\text{NO}_3)_2</math> at 100° (phenol red), and in concns. of not less than 0.001 N nephelometrically; the suspension of <math>\text{PbCO}_3</math> is stabilized with gelatin. B. C. A.</p>																																																			
<p>ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION</p>																																																			
<p>REGION 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52</p>																																																			

TOPCHIEVA, N.V.

Study of the hydration process of structural gypsum at low water-gypsum ratios. Stroil. mat. 9 no.2:31-32 F '63. (MIRA 16:2)  
(Gypsum)

TOPCHIEVA, N.V.

Regulating the processes of setting and hardening of plasters  
by the two-stage solution method[with summary in English].

Dop.AN URSR no.3:363-367 '61.

(MIRA 14:3)

1. Nauchno-issledovatel'skiy institut stroitel'nykh materialov i  
sooruzheniy Akademii stroitel'stva i arkhitektury USSR. Predstavleno  
akademikom AN USSR P.P.Budnikovym.  
(Plaster)

TOPCHIYEVA, N.V., inzh.

Two-stage method for making gypsum mortars. Stroim. 6 no.5:  
35-36 My '60. (MIRA 13:7)  
(Gypsum)



Country : USSR B  
 Category : General Biology.  
 Individual Development. Regeneration.  
 Abs. Jour : RZhBiol., No. 3, 1959, No. 9701  
 Author : Topchiyeva, G. I.  
 Institut. : -  
 Title : The Regeneration of the Uterine Epithelium  
 after a Superficial Mechanical Injury to the  
 Mucous Membrane.  
 Orig. Pub. : Arkhiv anatomii, gistol. i embriologii, 1956,  
 33, No 4, 49-54  
 Abstract : The regeneration of the mucous membrane of  
 the uterus of non-pregnant female rabbits was  
 studied 1/2, 1, 3, 6, 12, 24 and 48 hours  
 after it was subjected to superficial injury  
 by injecting 0.5 mg of "diatomaceous earth"  
 suspension or of a physiological solution of  
 lycopodium into the lumen of the tubal termi-  
 nal of one of the horns of the uterus. After  
 half an hour the superficial epithelium was  
 observed to be cast off from the large sur-  
 face of the uterine horn without intensive

Card: 1/3

Country : USSR  
Category :

Abs. Jour :

Author :  
Institut. :  
Title :

Orig. Pub. :

Abstract : Dys trophic manifestations in underlaying tissues. The epithelization of the mucosa is realized by moving in of the epithelial layer from the borders of the defect, and here, a flattening of the prismatic cells which are situated chiefly in ostiae of the glands, is observed. During the first 24 hours after the trauma, mitoses and amitoses are not observed to take place in epithelial cells. After 24 hours a significant number of mitoses are

Card: 2/3

Country : USSR  
Category :

Abs. Jour :

Author :  
Instit. :  
Title :

Orig Pub. :

Abstract : observed to form in the epithelium, especially in the epithelium of the gland's outline but also in the flattened as well as prismatic cover epithelium. To the extent of the cells' epithelialization, they assume a cubic and then a prismatic form and towards the 2nd-3rd day the epithelium assumes a corneal appearance. -- N. S. Anton'yeva

Card: 3/3

TOPCHYEVA, O.I. (Leningrad, 49, ul. L.Chaykinoy, d.21, kv.24)

Regeneration of the uterine epithelium in superficial mechanical injury of the mucous membrane. Arkh.anat.gist. i embr. 33 no.4: 49-54 O-D '56. (MLRA 10:4)

1. Iz otdela patologicheskoy anatomii (zaveduyushchiy - akademik N.N.Anichkov) Instituta eksperimental'noy meditsiny AMN SSSR i kafedry akusherstva i ginekologii (zaveduyushchiy - professor I.I. Yakovlev) Leningradskogo meditsinskogo instituta im. akademika I.P. Pavlova.

(ENDOMETRIUM, wounds and inj.  
regeneration process, histol.)

(REGENERATION  
endometrium, after superficial inj., histol. aspects)